CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

INTRODUCTION

This chapter describes the Proposed Action and alternatives to this action. The Proposed Action is to hold a competitive coal lease sale and issue a lease for the federal coal lands in the West Hay Creek LBA tract as applied for by Triton. This alternative assumes that the tract would be developed as a maintenance tract for the Buckskin Mine.

NEPA requires the consideration and evaluation of other reasonable ways to meet proposal objectives while minimizing or avoiding environmental impacts. Thus, NEPA requires the evaluation of a No Action Alternative and a practical range of other "reasonable" action alternatives that may avoid or minimize project impacts. Reasonable alternatives are defined by NEPA as those that are technically, economically, and environmentally practical and feasible. Reasonable alternatives are formulated to address issues and concerns raised by the public and agencies during scoping. These alternatives should represent another means of satisfying the stated purpose and need for the federal action. BLM Manual 3420-1 requires the BLM to evaluate the configuration of the tract based on providing for maximum economic recovery of the coal resource, maintaining or increasing the potential for competition, and avoiding future bypass or captive tract situations. If BLM identifies alternate tract configurations that meet these criteria, they are considered as alternatives to the Proposed Action.

The No Action Alternative (Alternative 1) is to reject the West Hay Creek lease application. Under the No Action Alternative, the tract would not be offered for competitive sale; existing mining at the Buckskin Mine would continue as permitted. Selection of the No Action Alternative would not necessarily preclude mining in this area as the applicant or some other party could submit another application to lease this coal in the future.

Alternatives 2 and 3 evaluate alternate tract configurations in which BLM considers adding coal to the tract as applied for. In evaluating this lease application, BLM identified a study area that includes adjacent unleased federal coal north and southeast of the West Hay Creek LBA tract as applied for. Alternative 2 evaluates adding all or part of the coal included in the entire study area to the tract as applied for. Alternative 3 evaluates adding only the coal included in the southeastern portion of the study area to the tract as applied for. Under alternatives 2 and 3, a competitive sale would be held and a lease issued for federal coal lands included in a tract modified by the BLM. The West Hay Creek LBA tract as applied for (Proposed Action) and the study area evaluated by BLM under alternatives 2 and 3 are shown in figure 2-1.

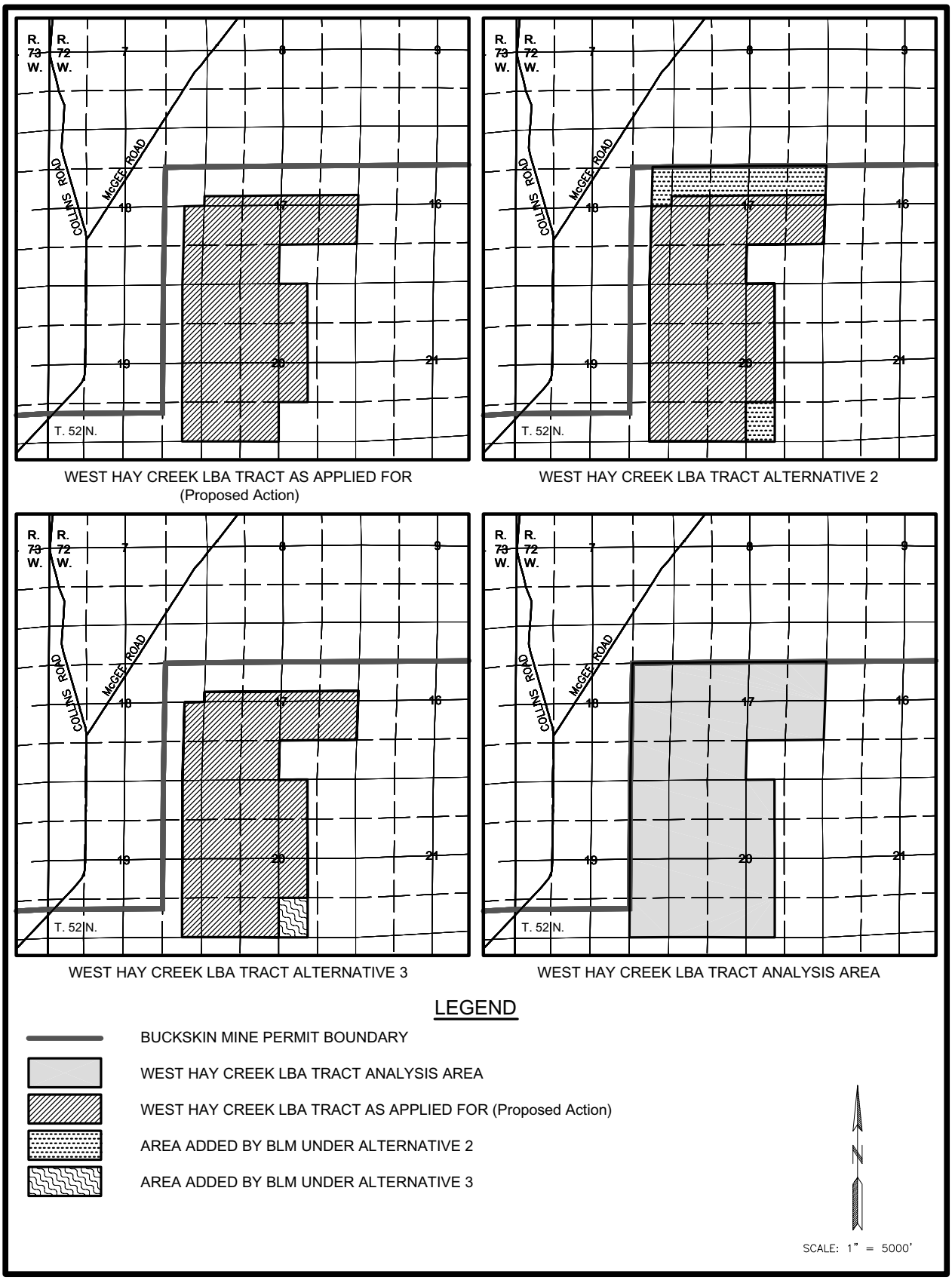

Figure 2-1. West Hay Creek LBA Tract Configurations.

Other alternatives considered but not analyzed in detail include:

- holding a competitive lease sale and issuing a lease for federal coal lands included in the West Hay Creek tract (as applied for or as modified by BLM), with the assumption that the tract would be developed as a stand-alone mine (Alternative 4); or

- delaying the sale of the West Hay Creek LBA tract in order to take advantage of higher coal prices and/or to allow recovery of the potential CBM resources in the tract before mining (Alternative 5). Under this alternative, it is assumed that the tract could be developed as a maintenance tract or a new start mine, depending on how long the sale is delayed.

LBA tracts are nominated for leasing by companies with an interest in acquiring them but, as discussed in chapter 1, the LBA process is, by law and regulation, an open, public, competitive sealed-bid process. If the decision reached after this EIS is completed is to hold a lease sale, the applicant (Triton) may or may not be the high bidder.

The Proposed Action and alternatives 2 and 3 (the action alternatives) considered in this EIS assume that Triton would be the successful bidder if a competitive sale is held, and that the West Hay Creek LBA tract would be mined as a maintenance tract for the permitted Buckskin Mine.

If a decision is made to hold a competitive lease sale and there is a successful bidder, a detailed mining and reclamation plan must be developed by the successful bidder and approved before mining can begin. As part of the approval process, the mining and reclamation plan would undergo detailed review by state and federal agencies. This plan could potentially differ from the plan used to analyze the impacts of the Proposed Action and alternatives 2 and 3 in this EIS, but the differences would not be expected to significantly change the impacts described here. These differences would typically be related to the details of mining and reclaiming the tract, but major factors (tons of coal mined, yards of overburden removed, acres disturbed, etc.) would not be notably different from the plan used in this analysis.

The Proposed Action and action alternatives assume that an area larger than the tract would have to be disturbed in order to recover all of the coal in the tract. The disturbances outside the coal removal area would be due to activities like overstripping, matching undisturbed topography, and constructing flood control and sediment control structures.

THE PROPOSED ACTION

Under the Proposed Action, the West Hay Creek LBA tract, as applied for by Triton, would be offered for lease at a competitive sale, subject to standard and special lease stipulations developed for the PRB (appendix D). The boundaries of the tract would be consistent with the tract configurations proposed in the West Hay Creek LBA tract lease application (figure 2-1). The Proposed Action assumes that Triton will be the successful bidder on the West Hay Creek LBA tract if it is offered for sale.

The legal description of the proposed West Hay Creek LBA tract coal lease lands as applied for by Triton under the Proposed Action is as follows:

T. 52 N., R. 72 W., 6th P.M., Campbell County, Wyoming

Section 17:	Lot	5 (S2S2)	10.265 acres
		6 (S2S2)	10.265
		7 (S2S2)	10.3475
		8 (S2S2)	10.3475
		9-14, inclusive;	247.24
Section 18:	Lot	13 (E2)	21.035
		20 (E2)	20.75
Section 19:	Lot	5 (E2)	20.71
		12 (E2)	20.84
		13 (E2)	20.935
		20 (E2)	21.065
Section 20:	Lot	2 (W2,W2E2)	31.1175
		3-6, inclusive;	165.38
		7 (W2, W2 E2)	31.1325
		10 (W2, W2E2)	31.1475
		11-14, inclusive	165.52
Total Acres			838.0975 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Title approved coal plat as of March 2, 2002.

As discussed in chapter 1 and appendix B, no lands in the West Hay Creek LBA tract were found to be unsuitable for mining. The tract as applied for includes approximately 838.0975 mineable acres. Triton estimates that it includes approximately 145 million tons of in-place coal, and that about 130 million tons of that coal would be recoverable. BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. BLM's estimate of the mineable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the

West Hay Creek LBA tract is included in the “Geology” section in chapter 3.

The approved Buckskin mine permit (Triton 2002) includes monitoring and mitigation measures that are required by SMCRA and Wyoming state law. If Triton acquires the West Hay Creek LBA tract, these monitoring and mitigation measures would be extended to cover operations on the LBA tract when the coal mining permit is revised to include mining the tract. This permit would have to be approved before coal removal could take place. These monitoring and mitigation measures are considered to be a part of the Proposed Action and action alternatives during the leasing process because they are regulatory requirements.

The West Hay Creek LBA tract would be mined as an integral part of the Buckskin Mine under the Proposed Action. The Buckskin Mine is already operating under both an approved state mining permit and an MLA mining plan. As shown on figure 2-1, the LBA tract as applied for is entirely within the current Buckskin Mine permit boundary, and all environmental baseline studies have been conducted. Both the existing approved state mining permit and the MLA mining plan would require revision to include mining the LBA tract as applied for. Since the West Hay Creek LBA tract would be an extension of the existing Buckskin Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 500 for the Buckskin Mine and the BLM’s resource recovery and protection plan (R2P2) for the Buckskin Mine.

Triton’s currently approved air quality permit from the WDEQ/AQD allows up to 27.5 million tons of coal per year. In 2002, the Buckskin Mine produced 18.3 million tons. In 2003, the mine produced approximately 17.5 million tons. Under the No Action Alternative, the 434 million tons of in-place leased federal coal reserves remaining as of January 1, 2002 will be mined in approximately 17 years at an average annual production rate of 25 million tons per year. Under the Proposed Action, Triton currently estimates that average annual production would be 25 million tons per year, and the life of the existing mine would be extended by approximately 5 years.

If Triton acquires the West Hay Creek LBA tract as applied for, they estimate that a total of 564 million tons of federal coal would be mined after January 1, 2002, with an estimated 130 million tons coming from the LBA tract. This estimate of recoverable reserves assumes that about 10% of the coal would be lost under normal mining practices, based on historical recovery factors at the Buckskin Mine. As of December 31, 2001, about 190 million tons of coal had been mined from within the current permitted area of the mine.

Topsoil removal would be performed before the overburden is removed. Whenever possible, direct transport to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment would be used to haul and distribute the stockpiled topsoil.

The Buckskin Mine is one of several coal mines currently operating in the PRB where the coal seams are notably thick, and the overburden is relatively thin. The truck-shovel mining method and hydraulic excavator have to date been used for overburden stripping and coal mining at the mine. The overburden is excavated and loaded into trucks by electric-powered shovels. Overburden would be removed within the West Hay Creek LBA tract by truck-shovel operations. Most overburden and all coal would be drilled and blasted to facilitate efficient excavation. As overburden is removed, most would be directly placed into areas where coal has already been removed. Elevations consistent with an approved post-mining topography (PMT) plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This would occur when there is an excess of material which may require temporary stockpiling; when there is insufficient material available from current overburden removal operations; or when future mining could redisturb an area already mined.

Coal would be produced from two coal seams, which Triton refers to as the Anderson and Canyon, at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. There are two existing crushing facilities within the Buckskin Mine permit area that provide the capacity to produce the permitted level. The two facilities employ one-stage crushing to size the coal to a nominal two-inch product. There are a total of 11 storage silos. While sufficient capacity exists, future facilities may be constructed to improve operating efficiency and air quality protection.

Current employment at the Buckskin Mine is 199. Production plans for the Buckskin Mine call for an increase to 25 million tons per year in 2004, with employment estimated at 225. If the LBA tract is acquired, Triton anticipates that production would be 25 million tons per year, and employment would be 225 persons.

Hazardous and Solid Waste

Solid waste, which is produced at the existing Buckskin Mine, consists of floor sweepings, shop rags, lubricant containers, welding rod ends, metal shavings, worn tires, packing material, used filters, and office and food wastes. The mine disposes of its solid wastes within its permit boundary in accordance with the WDEQ-approved solid waste disposal plan. Sewage is handled by WDEQ-permitted sewage systems at the existing mine facilities. Maintenance and lubrication of most of the equipment takes place at shop facilities at the mine.

Major lubrication and oil changes of most equipment are performed inside the service building lube bays, where used oil is currently contained and deposited in storage tanks. Used oil is disposed of in accordance with WDEQ Solid and Hazardous Waste Division (SHWD) regulations.

Triton has reviewed the EPA's *Consolidated List of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Re-authorization Act* (SARA) *of 1986* (as amended) and EPA's *List of Extremely Hazardous Substances* as defined in 40 CFR 355 (as amended) for hazardous substances used at the Buckskin Mine. Triton maintains files containing material safety data sheets for all chemicals, compounds, and/or substances which are or would be used during the course of mining.

Triton is responsible for ensuring that all production, use, storage, transport, and disposal of hazardous and extremely hazardous materials as a result of mining are in accordance with all applicable existing or hereafter promulgated federal, state, and local government rules, regulations, and guidelines. All mining activities involving the production, use, and/or disposal of hazardous or extremely hazardous materials are and would continue to be conducted so as to minimize potential environmental impacts.

Any release of hazardous or extremely hazardous substances in excess of the reportable quantity, as established in 40 CFR 117, is reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. The materials for which such notification must be given are the extremely hazardous substances listed in section 302 of the Emergency Planning and Community Right to Know Act and the hazardous substances designated under section 102 of CERCLA, as amended. If a reportable quantity of a hazardous or extremely hazardous substance is released, immediate notice must be given to the WDEQ Solid and Hazardous Waste Division and all other appropriate federal and state agencies.

Each mining company is expected to prepare and implement several plans and/or policies to ensure environmental protection from hazardous and extremely hazardous materials. These plans/policies include:

- spill prevention control and countermeasure plans;
- spill response plans;
- inventories of hazardous chemical categories pursuant to section 312 of SARA, as amended; and
- emergency response plans.

All mining operations are also required to be in compliance with regulations promulgated under the Resource Conservation and Recovery Act, Federal Water Pollution Control Act (Clean Water Act), Safe Drinking Water Act, Toxic Substances Control Act, Mine Safety and Health Act, and the CAA. In addition, mining operations must comply with all attendant state rules and regulations relating to hazardous material reporting, transportation, management, and disposal.

Compliance with these rules is the current practice at Buckskin Mine. Acquisition of the West Hay Creek LBA tract by Triton would not change these current practices nor the amount or type of any wastes generated or disposed at the mine, although quantities of some wastes would increase in proportion to anticipated increases in coal production (fuel, lubricants, and shop and office wastes).

ALTERNATIVE 1: NO ACTION ALTERNATIVE

Under the No Action Alternative, Triton's coal lease application would be rejected, the West Hay Creek LBA tract would not be offered for competitive sale, and the coal contained within the tract would not be mined. Rejection of the application would not affect permitted mining activities on existing leases at the adjacent Buckskin Mine. The mine currently leases approximately 4,949 acres of federal coal, about 160 acres of private coal, and about 640 acres of state coal (of which only 372 acres are within the permit boundary). Approximately 5,099 acres will eventually be affected. Under the No Action Alternative, Triton estimates that average annual production at the Buckskin Mine after 2002 will be 25 mmtpy, and average employment will be 225 persons. Portions of the surface of the LBA tract will be disturbed due to overstripping to allow coal to be removed from existing, contiguous leases.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS analysis was prepared under the assumption that the West Hay Creek tract would not be mined in the near future if the No Action Alternative were selected. However, selection of this alternative would not preclude leasing and mining of this tract in the future, either as a maintenance tract for an existing operation or as part of a new start mine.

ALTERNATIVE 2: THE PREFERRED ALTERNATIVE

Under Alternative 2, BLM would hold a competitive lease sale and issue a lease for a tract that is larger than the applied for configuration to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract (appendix D)

In evaluating the West Hay Creek coal lease application, BLM identified a study area, shown in figure 2-1 as "West Hay Creek LBA Tract Alternative 2" that includes unleased federal coal to the north and adjacent to the southeast corner of the tract as applied for. The study area includes approximately 176.2 acres and 25 million tons of in-place coal.

In identifying the northern study area, BLM wanted to evaluate the potential that another configuration of the tract would provide for more efficient recovery of the federal coal and/or increase competitive interest in the West Hay Creek LBA tract and the remaining unleased federal coal in this area.

In identifying the southeastern study area, BLM was concerned with the unleased lot of federal coal in Section 20 between the tract as applied for and the existing leases at the Buckskin Mine (See figure 1-2). If this lot is not leased with the adjacent federal coal, any mineable federal coal in the lot would potentially be bypassed when the surrounding coal is mined. (Note: Figure 1-2 also shows a gap between the LBA tract and the existing Buckskin leases in Section 17; the coal in that lot is private coal.) Before the Buckskin Mine applied for the West Hay Creek LBA, they evaluated the area adjacent to the southeast corner of the tract as applied for. The mine did not incorporate this area into their application because their current geologic model does not indicate that any mineable coal is present. As described in chapter 3, (Geology), modeling indicates the presence of a geologic anomaly along the southern portion of the tract. .

The BLM's Preferred Alternative would add all of the study area to the southeast (approximately 31.16 acres) and a portion of the study area to the north (approximately 51.90 acres), as illustrated in figure 2-2. BLM added the southeast part of the study area to the Preferred Alternative because, if it is leased with the surrounding coal, it could be mined if additional drilling does indicate that there is some recoverable coal in the area. BLM added a portion of the study area the north of the tract as applied for to the Preferred Alternative in order to eliminate the notch in the northwest corner of the tract as applied for, as shown in figure 2-1. This would facilitate more efficient recovery of the coal.

The following lands would be added to the tract under the BLM's Preferred Alternative:

Section 17	Lot	5 (N2S2)	10.265
		6 (N2S2)	10.265
		7 (N2S2)	10.3475
		8 (N2S2)	10.3475
Section 18:	Lot	12 (SE4)	10.6725
Section 20:	Lot	15 (W2, W2E2)	31.1625
Total acres:			83.06 acres

Triton estimates the 83.06 acres which BLM would be added under the Preferred Alternative includes approximately 15 million tons of in-place coal, and that about 10 million tons of that coal would be recoverable.

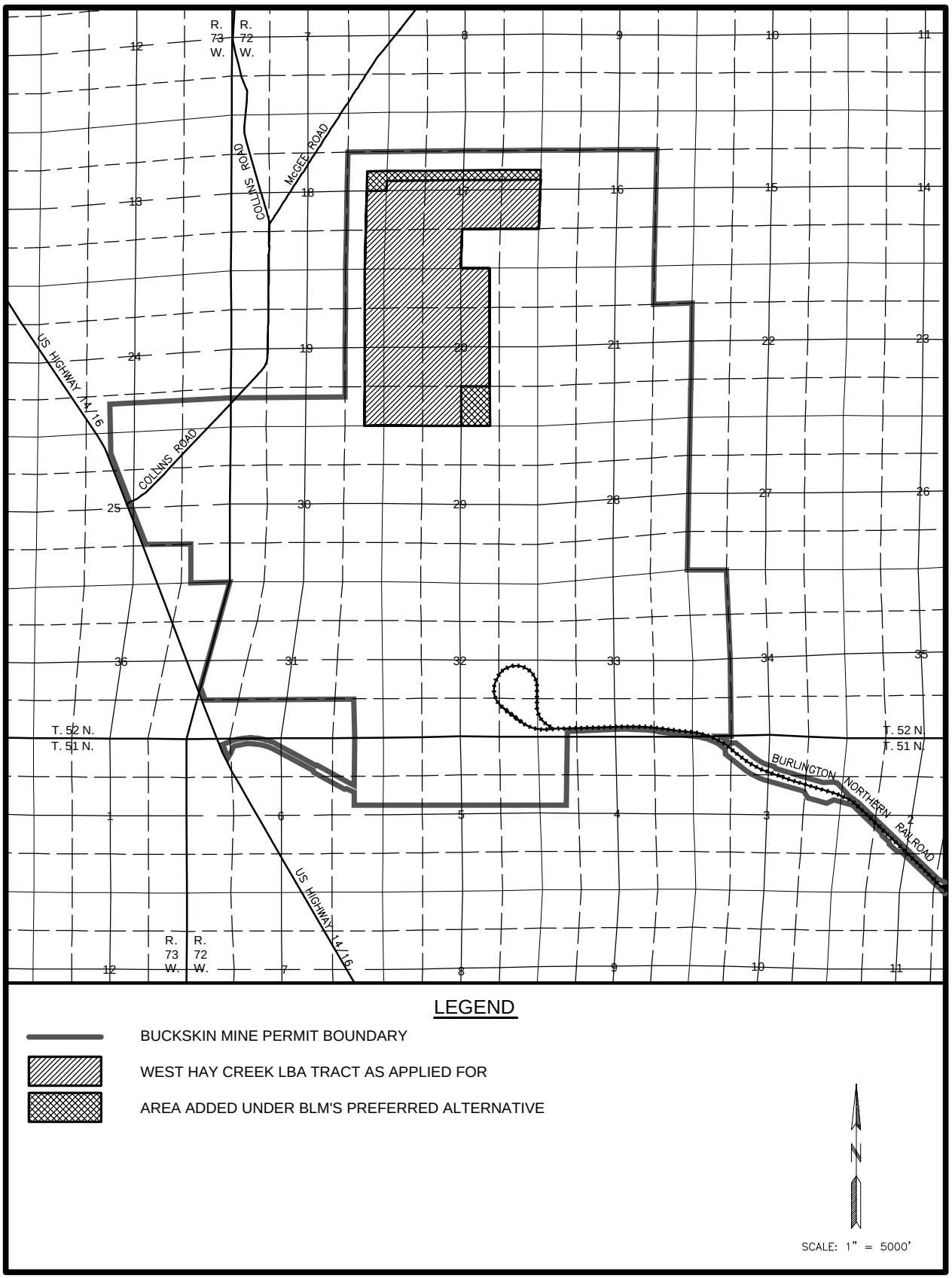

Figure 2-2. West Hay Creek LBA Preferred Alternative Tract Configuration.

The legal description of the West Hay Creek LBA Tract under the BLM's Preferred Alternative is:

T. 52 N., R. 72 W., 6th P.M., Campbell County, Wyoming

Section 17:	Lot	5 (S2)	20.53
		6 (S2)	20.53
		7 (S2)	20.695
		8 (S2)	20.695
		9-14, inclusive;	247.24
Section 18:	Lot	12 (SE4)	10.6725
		13 (E2)	21.035
		20 (E2)	20.75
Section 19:	Lot	5 (E2)	20.71
		12 (E2)	20.84
		13 (E2)	20.935
		20 (E2)	21.065
Section 20:	Lot	2 (W2, W2E2)	31.1175
		3-6, inclusive	165.38
		7 (W/2, W2E2)	31.1325
		10 (W2, W2E2)	31.1475
		11-14, inclusive	165.52
		15 (W2, W2E2)	31.1625
Total acres:			921.1575 acres

Triton estimates that the reconfigured tract includes approximately 160 million tons of in-place coal, and that approximately 140 million tons of that coal would be recoverable. BLM will independently evaluate the volume and average quality of the coal resources included in the tract offered for sale as part of the fair market value determination process.

As shown in figure 2-2, the Preferred Alternative is entirely within the Buckskin Mine permit boundary, and all environmental studies have been conducted. Both the existing approved state mining permit and MLA mining plan would require revision to include mining the tract under the Preferred Alternative. This alternative assumes that the tract would be developed as a maintenance tract for the Buckskin Mine. Production and employment would be similar to the Proposed Action. Other assumptions would also be the same as for the Proposed Action. Since the West Hay Creek LBA tract would be an extension of the existing Buckskin Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 500 for the Buckskin Mine and the BLM R2P2 for the Buckskin Mine.

ALTERNATIVE 3

Under Alternative 3, BLM would hold a competitive lease sale and issue a lease for a tract that is larger than the applied for configuration, if a sale is held and there is a successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract (appendix D). BLM is considering this tract configuration for the West Hay Creek LBA tract in order to minimize the risk of bypassing federal coal that would potentially become economically unrecoverable if it is not included in this tract.

As part of the preliminary geologic analysis of the federal coal resources in and around the West Hay Creek LBA tract, the BLM identified unleased federal coal southeast of the tract as applied for that would be isolated and might be bypassed if it is not included in the tract.

Specifically, this alternative would add approximately 31.1625 acres of unleased federal coal in the W½ W½ E½ of lot 5 in section 20. As discussed above, the mine did not incorporate this area into their application because their current geologic model does not indicate that any mineable coal is present. BLM is considering adding this area to the lease because, as the model becomes further defined by additional drilling information, there may be portions of the area that include mineable coal.

The Alternative 3 tract is described as follows:

T. 52 N., R. 72 W., 6th P.M., Campbell County, Wyoming

Section 17:	Lot	5 (S2S2)	10.265 acres
		6 (S2S2)	10.265
		7 (S2S2)	10.3475
		8 (S2S2)	10.3475
		9	41.32
		9-14, inclusive;	247.24
Section 18:	Lot	13 (E2)	21.035
		20 (E2)	20.75
Section 19:	Lot	5 (E2)	20.71
		12 (E2)	20.84
		13 (E2)	20.935
		20 (E2)	21.065
Section 20:	Lot	2 (W2, W2E2)	31.1175
		3-6, inclusive;	165.38
		7 (W2, W2E2)	31.1325
		10 (W2, W2E2)	31.1475
		11-14, inclusive	165.52
		15 (W2, W2E2)	31.1625
Total acres:			869.26 acres

Since Triton estimates that no additional coal would be recoverable if this area is added to the tract, they estimate that the tract would include approximately 130 million tons of recoverable coal. BLM will independently evaluate the volume and average quality of the coal resources included in the tract offered for sale as part of the fair market value determination process.

As shown on figure 2-1, the tract in this alternative is entirely within the current Buckskin Mine permit boundary, and all environmental baseline studies have been conducted. Both the existing approved state mining permit and the MLA mining plan would require revision to include mining the Alternative 3 tract. This alternative assumes that the tract would be developed as a maintenance tract for the Buckskin Mine. Other assumptions would also be the same as for the Proposed Action. Since the West Hay Creek LBA tract would be an extension of the existing Buckskin Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD mine permit 500 for the Buckskin Mine and the BLM R2P2 for the Buckskin Mine.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Alternative 4

Under this alternative, as under the Proposed Action and alternatives 2 and 3, the BLM would hold a separate, competitive, sealed-bid sale for the lands included in the West Hay Creek LBA tract. Alternative 4 assumes that the successful qualified bidder would be someone other than the applicant, and that this bidder would acquire the tract in order to open a new mine to develop the coal resources in the tract.

A company acquiring this coal for a new stand-alone mine would require considerable initial capital expenses, including the construction of new surface facilities (offices, shops, warehouses, coal processing facilities, coal loadout facilities, and rail spur), extensive baseline data collection, and development of new mining and reclamation plans. In addition, a company or companies acquiring this coal for a new start mine would have to compete for customers with established mines in a competitive market.

BLM currently estimates that a tract would potentially need to include as much as 500 to 600 million tons of coal in order to attract a buyer interested in opening a new mine in the Wyoming PRB. This is based on the assumptions that an operator would construct facilities capable of producing 30 mmtpy to take advantage of the economies of scale offered by the coal deposits in the PRB, and 20 to 30 years of coal reserves would be needed to justify the expense of building the facilities described above. Given these assumptions, under the Proposed Action or alternatives 2 or 3, the tract does not include sufficient coal resources to consider opening a new mine. Therefore, it is unlikely that a company would lease the West Hay Creek LBA tract in order to open a new mine, and this alternative is not

analyzed in detail in this EIS.

The environmental impacts of developing a new mine to recover the coal resources in the West Hay Creek LBA tract would be greater than under the Proposed Action, the No Action Alternative, or alternatives 2 or 3 because of the need for new facilities, new rail lines, new employment, and the creation of additional sources of particulates (dust). In the event that a lease sale is held and the applicant is not the successful bidder, the successful bidder would be required to submit a detailed mining and reclamation plan for approval before any the tract could be mined. This NEPA analysis would be reviewed and supplemented as necessary before that mining and reclamation plan is approved.

Alternative 5

Under Alternative 5, the BLM would delay the sale of the West Hay Creek LBA tract as applied for to increase the benefit to the public afforded by higher coal prices and/or to allow more complete recovery of the potential CBM resources in the tract prior to mining.

There are two major sources of revenue to state and federal governments from the leasing and mining of federal coal: 1) the competitive bonus bid paid at the time the coal is leased, and 2) a 12.5% royalty collected when the coal is sold. This alternative could potentially increase the fair market value of the coal resources in the LBA tract, thus increasing the bonus bid when the coal is leased. The price paid for coal from northeastern Wyoming decreased by more than $1.00 per ton from 1992 to 2000, while production of low sulfur PRB coal increased annually since 1992. Prices for PRB coal increased in 2001 and 2002, and are projected to remain stable or decrease slightly from 2004 through 2008 (WGS 2003). There is no assurance that delaying the sale would result in a higher coal price.

The fair market value of the tract and the resulting bonus payment to the government could increase if the lease sale is postponed and if PRB coal prices do increase. The postponement would not necessarily lead to higher royalty income to the state or federal governments. Royalty payments are the larger of the two revenue sources. They increase automatically when coal prices increase because they are collected at the time the coal is sold, but they cannot be collected until the coal is leased and permitted which takes several years. If leasing is delayed until prices increase, then by the time the coal is mined the higher coal prices may or may not persist. If the higher coal prices do persist, they may enable the coal lessee to negotiate longer term contracts at higher prices, which would result in longer term, higher royalty payments. In contrast, if the existing mining operation runs out of coal reserves before prices rise, the operations may have to be shut down before additional coal can be leased and permitted for mining. In that case, the fair market value of the coal may actually drop because the added expense of reopening a mine or starting a new mine would have to be factored into the fair market value.

Other considerations include the value of leaving the mineable coal for future development versus the value of making low-sulfur coal available now, in anticipation of cleaner fuel sources being developed in the future. Continued leasing of PRB coal enables coal-fired power plants to meet Clean Air Act requirements without constructing new plants, revamping existing plants, or switching to existing alternative fuels, which may significantly increase power costs for individuals and businesses. If cleaner fuel sources are developed in the future, they could be phased in with less economic impact to the public.

A range of the potential future economic benefits of delaying leasing until coal prices rise could be quantified in an economic analysis, but the benefits would have to be discounted to the present, which would make them similar to the Proposed Action and the action alternatives.

CBM resources are currently being recovered from oil and gas leases on the West Hay Creek LBA tract and there are several mechanisms in place that can be used to allow continuing recovery of the CBM resources prior to mining if the Federal coal in the tract is leased now:

- BLM will attach a Multiple Mineral Development stipulation to the lease which states that BLM has the authority to withhold approval of coal mining operations that would interfere with the development mineral leases issued prior to the coal lease [see Attachment 2(c)].

- Mining of the West Hay Creek LBA Tract cannot occur until the coal lessee has a permit to mine the tract approved by the Wyoming Department of Environmental Quality and a MLA mining plan approved by the Secretary of the Interior. Before the MLA mining plan can be approved, BLM must approve the Resource Recovery and Protection Plan (R2P2) for mining the tract. Prior to approving the R2P2, BLM can review the status of CBM development on the tract and the mining sequence proposed by the coal lessee. The permit approval process generally takes the coal lessee several years, during which time CBM can be recovered.

- BLM has a policy in place on CBM-coal conflicts (BLM Instruction Memorandum No. 2003-253), which directs BLM decision makers to optimize the recovery of both resources and ensure that the public receives a reasonable return.

This alternative was not analyzed in detail because it would not produce substantially different impacts from other alternatives analyzed in detail. Rental and royalty provisions in the proposed lease provide for the United States to benefit if coal prices have increased by the time of mining. Moreover, recovery of a large portion of the

economically-recoverable CBM resources on the tract would be anticipated after lease issuance because of the mechanisms discussed above.
The environmental impacts of mining the coal later as part of an existing mine would be expected to be similar and about equal to the Proposed Action and the action alternatives. If a new mine start is required to mine the coal, the environmental impacts would be expected to be greater than if it were mined as an extension of an existing mine.

COMPARISON OF ALTERNATIVES

Figure 2-1 shows the locations of the Proposed Action and alternatives 2 and 3 for the West Hay Creek LBA tract. Table 2-1 is a summary comparison of coal production, surface disturbance, mine life, and projected federal and state revenues for the Proposed Action and alternatives 2 and 3 for the West Hay Creek LBA tract.

Table 2-2 presents a comparative summary of the direct and indirect environmental impacts of implementing each alternative as compared to the No Action Alternative. The No Action Alternative assumes completion of currently permitted mining at the Buckskin Mine for comparison to anticipated mining if the West Hay Creek LBA tract is leased. Table 2-3 presents a comparative summary of cumulative environmental impacts of implementing each alternative. The environmental consequences of the Proposed Action and alternatives are analyzed in chapter 4.

These summary impact tables are derived from the following explanation of impacts and magnitude. As required by NEPA, all agencies of the federal government are required to provide a detailed statement by the responsible official on:

- the environmental impact of the Proposed Action,
- any adverse environmental effects which cannot be avoided should the proposal be implemented,
- Alternatives to the Proposed Action,
- the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented (42 USC 4332[C]).

TABLE 2-1

COMPARISON OF COAL PRODUCTION, SURFACE DISTURBANCE, AND MINE LIFE

Item	No Action Alternative (existing Buckskin Mine)	Added by Proposed Action	Added by Alternative 2 (Preferred Alternative)	Added by Alternative 3
In-place[1] federal coal (as of 1/1/02)	512 mmt	145 mmt	160 mmt	150 mmt
Recoverable coal[2] (as of 1/1/02)	434 mmt	130 mmt	140 mmt	130 mmt
Coal mined[3], 12/31/01	189.9 mmt	---	—	---
Lease acres[4]	4,949 ac	838.0975 ac	921.1575 ac	869.26 ac
Total area to be disturbed[4]	5,099 ac	830 ac	897 ac	830 ac
Permit area[4]	7,602 ac	0 ac	0 ac	0 ac
Average annual post-2001 coal production	25 mmt	0 mmt	0 mmt	0 mmt
Remaining life of mine (post-2001)	17.4 yrs	5.2 yrs	5.6 yrs	0 yrs
Average no. of employees	225	0	0	0
Total projected state revenues (post-2001)[5]	$477 million	$143 million	$154 million	$143 million
Total projected federal revenues (post-2001)[6]	$165 million	$49 million	$53 million	$49 million

[1] In-place coal includes all Canyon and Anderson coal within the lease area.

[2] Buckskin Mine defines recoverable coal as an estimate of the extractable coal that can be recovered. This figure excludes all mining losses that occur during normal mining operations, including wedge losses, coal left in pillars and fenders, and top and bottom coal cleaning.

[3] Assumes 90% to 92% recovery of extractable coal.

[4] Lease area includes federal coal leases only and does not include state and private coal within the permit boundary. The permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow an easily defined legal land description. The additional disturbance areas are less than the additional lease areas for the action alternatives because portions of the lease areas are included in the existing disturbance area for Buckskin Mine. The permit area would not need to be changed for Alternative 3 or the Preferred Alternative.

[5] Projected revenue to the state of Wyoming is $1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments (University of Wyoming 1994).

[6] Federal revenues based on $4.00 per ton price x federal royalty of 12.5% x amount of recoverable coal plus bonus payment on LBA coal of $0.26 per ton based on average of last 11 LBAs (table 1-1) x amount of recoverable coal less state's 50% share.

Impacts can be beneficial or adverse, and they can be a primary result of an action (direct) or a secondary result (indirect). They can be permanent, long-term (persisting beyond the end of mine life and reclamation) or short-term (persisting during mining and reclamation and through the time the reclamation bond is released). Impacts also vary in terms of significance. The basis for conclusions regarding significance are the criteria set forth by the Council on Environmental Quality (40 CFR 1508.27) and the professional judgment of the specialists doing the analyses. Impact significance may range from negligible to substantial; impacts can be significant during mining but be reduced to insignificance following completion of reclamation.

TABLE 2-2

SUMMARY COMPARISON OF DIRECT AND INDIRECT IMPACTS

(Chapter 4 contains an additional description of the impacts.)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
TOPOGRAPHY AND PHYSIOGRAPHY		
The topography following reclamation would be gentler and more uniform. This topographic moderation would be permanent and would potentially result in: - a potential reduction in microhabitats habitat diversity, and big game carrying capacity. - a reduction in water runoff and peak flows which would potentially help reduce erosion, enhance vegetative productivity, and accelerate groundwater recharge.	Impacts would be moderate but long term on the existing mine area. Some impacts would be beneficial.	Same as the No Action Alternative on expanded area of coal removal.
GEOLOGY AND MINERALS		
Coal, overburden and topsoil would be removed, topsoil and overburden would be replaced. The physical characteristics of the overburden and topsoil would be permanently altered when it is replaced. Unsuitable overburden material would be placed in areas where it would not affect groundwater quality or revegetation success. Coal bed methane would be lost through venting and depletion of hydrostatic pressure. Subcoal conventional oil and gas resources could not be developed during mining.	Impacts would be moderate and long term to permanent on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
SOILS		
Changes to physical properties would include increased near-surface bulk density and more uniformity in soil type, thickness, and texture. Soil material that is not suitable to support plant growth would not be salvaged for use in reclamation	Impacts would be moderate but long-term on the existing mine area. Some changes to the physical properties would be beneficial.	Same as the No Action Alternative on expanded area of coal removal.
Changes in chemical properties would include more uniform soil nutrient distribution.	Changes to the chemical properties would have a beneficial, long-term effect on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
Changes in biological properties would include a reduction in organic matter and microorganism populations. The existing plant habitat in stockpiled soils would be reduced.	Changes in biological properties would be moderate and short-term to long-term on the existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
AIR QUALITY		
Overburden and coal blasting, coal hauling and dumping, and operation of mining equipment would cause elevated concentrations of particulate matter and gaseous emissions. Public would potentially be exposed to elevated particulate and gaseous emissions along publicly accessible roads and in occupied dwellings located near mining operations.	Impacts would be moderate and short term on the existing mine permit and surrounding area.	Same as the No Action Alternative on the expanded area of coal removal and surrounding area.

TABLE 2-2
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
WATER RESOURCES		
Surface water: Changes in runoff characteristics and sediment discharge would be associated with disruption of surface drainage systems. Sediment control structures would moderate peak flows and help control sediment down-stream. Vegetation removal during mining could result in increased erosion rates. Loss of soil structure after reclamation would act to increase runoff rates, but topographic moderation would help increase infiltration.	Impacts would be moderate and short term to long term on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
Groundwater: Coal and overburden aquifers would be removed; the replaced overburden would have altered hydraulic properties; water levels in affected coal and overburden aquifers adjacent to the mine would be depressed. Groundwater quality in backfilled areas would be changed but would be expected to be similar to premining aquifers.	Impacts would be minor to moderate and long term on the existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
ALLUVIAL VALLEY FLOORS (AVFs)		
AVF's significant to agriculture can be disturbed but must be replaced; AVFs not significant to agriculture would be removed and restored.	No impact on existing mine area.	No AVFs on expanded area of coal removal.
WETLANDS		
Wetlands would be removed by mining operations.	Impacts would be moderate and long term on existing mine area. Juris-dictional wetlands would be replaced in accordance with section 404 of the Clean Water Act; non-jurisdictional wetlands would be replaced as required by the surface land owner or WDEQ/ LQD.	Same as the No Action Alternative on expanded area of coal removal.
VEGETATION		
During mining, progressive removal of native vegetation would result in increased erosion, loss of wildlife and livestock habitat, and loss of wildlife habitat carrying capacity.	Impacts would be moderate and short- to long-term on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
After reclamation, vegetation patterns would be changed, vegetation diversity would be decreased, shrub density could be reduced and wildlife carrying capacity would potentially be reduced. Nonnative plant species would potentially invade.	Impacts would be minor to moderate and long term on existing mine area. Steps to control invasion by nonnative plant species would be implemented.	Same as the No Action Alternative on expanded area of coal removal.

TABLE 2-2
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
WILDLIFE		
During mining, wildlife would be displaced from and habitat would be lost in active mining areas. Wildlife movement through mine permit area would be restricted. Small mammal mortality would increase. Foraging and nesting habitat for raptors and migratory birds and breeding and brood-rearing habitat for sage grouse would be lost. Habitat for waterfowl and aquatic species would be disturbed. Mine-related traffic would be responsible for road kills.	Impacts would be minor to moderate and short term on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
After reclamation, big game habitat carrying capacity and habitat diversity on reclaimed lands would potentially be decreased. Changes in sagebrush density on reclaimed lands may limit sage grouse repopulation until premining conditions are restored. Post mining aquatic habitat may not duplicate premining habitat.	Impacts would be moderate and long term on existing mine area.	Same as the No Action Alternative on expanded area of coal removal.
THREATENED, ENDANGERED, AND PROPOSED SPECIES		
Black-footed ferret	As determined by previous consultation with FWS for all species	No effect
Bald eagle habitat.		May affect, not likely to adversely affect
Ute ladies'-tresses		May affect, not likely to adversely affect
Black-tailed prairie dog		No effect
LAND USE AND RECREATION		
Livestock grazing use and wildlife habitat in active mining areas would be reduced before reclamation. Oil and gas production and transportation facilities would be removed prior to mining. Subcoal oil and gas reservoirs would not be accessible for development during mining and before reclamation. CBM not recovered prior to mining would be permanently lost. Hunting access would be restricted during mining and reclamation.	Impacts would be moderate and short term to long term on existing mine area.	Same as No Action Alternative on expanded area of coal mining.
CULTURAL RESOURCES		
Historic and prehistoric sites and isolated artifacts would be disturbed. All sites that meet the eligibility requirements for the NRHP would be avoided or mitigated through data recovery. Potential for vandalism and unauthorized collection would increase.	Eligible or unevaluated sites on existing mine area must be avoided or mitigated through data recovery; ineligible sites may be destroyed without further work.	Same as No Action Alternative on expanded area of coal mining.

TABLE 2-2
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
NATIVE AMERICAN CONCERNS	No impact identified on existing mine area. Native American consultation completed for existing mine permit area.	Same as the No Action Alternative on expanded area of coal removal. OSM completed Native American consultation on the lands within the analysis area in 2000.
PALEONTOLOGICAL RESOURCES		
Plant, invertebrate, and vertebrate fossil material in overburden and coal would potentially be lost. Potential for unauthorized collection and vandalism would increase. Buried fossil material would potentially be exposed for scientific examination.	Minor, long-term to permanent on existing mine area, some impacts would be beneficial.	Same as the No Action Alternative on expanded area of coal removal.
VISUAL RESOURCES		
During mining, a landscape altered by presence of facilities and mining operations would be visible from roads and dwellings in the area. Following reclamation, slopes would be smoother and sagebrush would be less dense.	Impacts would be moderate and short term on existing mine area during mining and reclamation. Following reclamation, impacts would be minor and long-term.	Same as the No Action Alternative on expanded area of coal removal.
NOISE		
Increased noise levels during mining could affect occupied dwellings within 1 mile and wildlife in immediate vicinity.	Impacts would be moderate and short term on existing mine and surrounding area.	Same as the No Action Alternative on expanded area of coal removal.
TRANSPORTATION		
Railroads would be used to ship coal, employees would travel to and from work on existing roads, existing pipelines, phone lines, and electrical lines would be removed prior to mining.	Impacts would be moderate, short-term for mining operations on existing mine area	Same as the No Action Alternative on expanded area of coal removal
SOCIOECONOMICS		
State and federal governments would receive revenues from royalties and taxes. Campbell and Converse counties would benefit from economic development, stable employment, and taxes.	Impacts would be moderate and short term for mining operations on existing mine area.	Impacts would be moderate, beneficial, and short term for mining operations on expanded area of coal removal.

TABLE 2-3

SUMMARY COMPARISON OF CUMULATIVE IMPACTS

(Chapter 4 for contains an additional description of the impacts.)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
TOPOGRAPHY AND PHYSIOGRAPHY		
After reclamation, reduced topographic diversity could lower big game carrying capacity, increase precipitation infiltration, and reduce peak flows in affected portion of drainages.	Impacts would be minor and long term in the three groups of mines within the corridor extending from north of Gillette to south of Wright; some impacts could be beneficial.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
GEOLOGY AND MINERALS		
Nonrenewable coal and CBM resources in the PRB would be removed to generate heat and power and would not be available for use in the future.	Impacts would be moderate and short term. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal in the northern mine group.
SOILS		
Soils would be removed and replaced in the mine disturbance areas. Soil disturbance associated with CBM and other proposed development would be less intensive, but would be more widespread.	Impacts would be moderate and long term. Coal related disturbance would affect approximately 25,300 acres in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
AIR QUALITY		
Potential cumulative impacts associated with exiting and proposed mining operations and Wyoming PRB Oil and Gas Project EIS Alternative 1 and Montana Statewide Oil and Gas EIS Alternative E would include:		
- Cumulative near-field concentrations of criteria pollutants.	Above PSD Class II increment for PM_{10} 24-hour. Concentrations of other pollutants below increments.	Same as No Action.
- Cumulative far-field concentrations of NO_2 annual.	Above PSD Class I increment in Northern Cheyenne Reservation. Concentrations in other areas are below increments.	Same as No Action.
- Cumulative far-field concentrations of PM_{10} 24-hour.	Above PSD Class I increment in Northern Cheyenne Reservation and Washakie Wilderness. Concentrations in other areas are below increments.	Same as No Action.
- Cumulative visibility impacts in mandatory Class I areas.	Potential impacts range from three days above 1.0 dV at Red Rock Lakes Wilderness to 32 days above 1.0 dV at Wind Cave National Park. Potential maximum deciview change is 29.0 dV at U.L. Bend Wilderness.	Same as No Action.
- Acidification of sensitive lakes.	Potential impacts are 180.0 percent of the level of acceptable change (LAC) in Upper Frozen Lake and 10.4 percent of the LAC in Florence Lake. Impacts at other lakes are below the LAC.	

TABLE 2-3
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
WATER QUALITY		
Surface Water: Mining disturbance would affect surface water quality and quantity within the Little Powder River drainage basin.	Disruption and diversions affecting approximately 7% of Little Powder River drainage basin during 50 years of mining and reclamation.	Same as the No Action Alternative on less than 8% of Little Powder River drainage basin.
- Potential for offsetting changes in surface water flow amounts due to overlapping development of coal and CBM resource.	Minor, short term, potentially beneficial on existing mine areas.	Same as No Action Alternative on expanded mine area.
Groundwater: Replacement of existing coal and overburden aquifers with backfill material	Minor to moderate in area of disturbance for existing leases in northern mine group	Size of backfill area would increase by disturbance area associated with mining 921 additional acres of leased federal coal.
- Overlapping drawdown in the coal and alluvial aquifers between surface coal mines.	Moderate, long term for existing leases in northern mine area.	Size of drawdown area would be affected by coal removal on up to 921 additional acres of leased federal coal.
- Overlapping drawdown in the coal aquifer caused by surface mining and CBM development.	Additive, long term in area immediately west of surface coal mines.	Same as No Action for expanded mine area.
- Water-level decline in the sub-coal aquifers as a result of all development.	No cumulative impacts anticipated for subcoal wells separated by 1 mile or more.	Same as No Action for expanded mine area.
- Change in groundwater quality as a result of all development.	No cumulative impacts anticipated.	Same as No Action for expanded mine area.
ALLUVIAL VALLEY FLOORS (AVFs)		
AVFs in coal removal area would be removed when coal is mined.	No cumulative impacts anticipated on existing mine area. AVFs disturbed by mining would be replaced.	Same as the No Action Alternative on expanded area of coal removal.
WETLANDS		
Wetlands in coal removal area would be removed when coal is mined.	Incremental, not additive, short term on existing leases, jurisdictional wetlands would be replaced as required under Section 404 of the Clean Water Act; non-jurisdictional wetlands would be replaced as required by the surface land owner or WDEQ/LQD.	Same as No Action on expanded area of coal removal.
VEGETATION		
Existing vegetation would be removed during mining and restored during reclamation. After reclamation, vegetation patterns would be changed, vegetation diversity would be decreased, shrub density could be reduced and wildlife carrying capacity would potentially be reduced. Nonnative plant species would potentially invade.	Impacts would be moderate and short term to long-term. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group. Steps to control invasion by nonnative plant species would be implemented.	Same as the No Action Alternative on up to additional 921 acres of leased federal coal in the northern mine group.

TABLE 2-3
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
WILDLIFE		
During mining, wildlife would be displaced from and habitat would be lost in active mining areas. Wildlife movement through mine permit areas would be restricted. Small mammal mortality would increase. Foraging and nesting habitat for raptors and migratory birds and habitat for sage grouse would be lost. Habitat for waterfowl and aquatic species would be disturbed. Mine-related traffic would be responsible for road kills. CBM development on or adjacent to coal mines could expand area of impacts to some species including raptors and sage grouse.	Impacts would be minor to moderate and short term to long-term. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group. Few sage grouse wintering areas or leks lie within mining disturbance area.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group. No active sage grouse leks would be added to area of mine disturbance.
After reclamation, big game habitat carrying capacity and habitat diversity on reclaimed lands would potentially be decreased. Changes in sagebrush density on reclaimed lands may limit sage grouse repopulation until premining conditions are restored. Post mining aquatic habitat may not duplicate premining habitat.	Impacts would be moderate and short term to permanent. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
THREATENED, ENDANGERED, AND PROPOSED SPECIES		
See Appendix G	Potential impacts related to coal removal would affect approximately 24,715 acres of federal coal in the northern mine group; impacts may overlap with other developments on adjacent lands.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
LAND USE AND RECREATION		
Agricultural production would be lost. Oil and gas development and production would be disrupted while mining is occurring and facilities would be removed. Wildlife habitat would be reduced. Access to public lands users, particularly hunters, would be lost.	Impacts would be moderate and short term. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal underlying private surface would be leased in the northern mine group.
CULTURAL RESOURCES		.
Historic and prehistoric sites and isolated artifacts would be disturbed. All sites that meet the eligibility requirements for the NRHP would be avoided or mitigated through data recovery. Potential for vandalism and unauthorized collection would increase.	Impacts would be moderate and permanent. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.

TABLE 2-3
(continued)

RESOURCE	MAGNITUDE TYPE AND DURATION OF IMPACT (Impacts are assumed to be adverse unless otherwise indicated) NO ACTION ALTERNATIVE	PROPOSED ACTION AND ALTERNATIVES
NATIVE AMERICAN CONCERNS	No impact identified on existing mine area. Native American consultation completed for existing mine permit areas.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal underlying private surface in the northern mine group OSM completed Native American consultation on the lands within the analysis area in 2000.
PALEONTOLOGICAL RESOURCES		
Plant, invertebrate, and vertebrate fossil material in overburden and coal would potentially be lost. Potential for unauthorized collection and vandalism would increase. Buried fossil material would potentially be exposed for scientific examination.	Minor, long-term to permanent. Coal removal would affect approximately 24,715 acres of federal coal in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
VISUAL RESOURCES		
During mining, a landscape altered by presence of facilities and mining operations would be visible from roads and dwellings in the area. Following reclamation, slopes would be smoother and sagebrush would be less dense.	Impacts would be moderate and short term on approximately 24,715 acres in the northern mine group during mining and reclamation. Following reclamation, impacts would be minor and long-term.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
NOISE		.
Increased noise levels during mining could affect occupied dwellings within 1 mile and wildlife in immediate vicinity.	Impacts would be minor to moderate, short term while mining operations are conducted on approximately 24,715 acres in the northern mine group.	Same as the No Action Alternative on up to 921 additional acres of leased federal coal in the northern mine group.
TRANSPORTATION FACILITIES		
Use of existing transportation facilities at current levels would be extended. Oil and gas pipelines would be removed from all areas to be mined.	Impacts would be moderate and short term.	Same as the No Action Alternative on expanded area of coal removal.
SOCIOECONOMICS		
Cumulative mineral and energy related development could increase, which could result in new employment and housing needs. Income to the state and counties from revenues and royalties could be expected.	Although short term, benefits would be significant, some benefits would be beneficial.	Same as the No Action Alternative on expanded area of coal removal.